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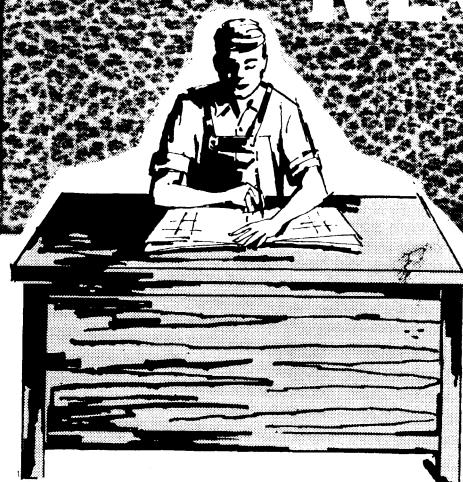
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# FAMILY-FARM RECORDS



PROCUREMENT SECTION  
CURRENT SERIES

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**UNITED STATES  
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AGRICULTURE**

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Growth Through Agricultural Progress

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# FAMILY-FARM RECORDS



Operators of family farms will find it useful to keep five different kinds of business records. These are: Documentary records; balance sheet; sales and purchase records; end-of-year summary; and production records.

Documentary records are various types of legal papers, which are kept chiefly to protect property rights.

The other four types of records are accounts from which the operator can get information he needs to run his farm business successfully. These accounts, if kept year after year, give the farm operator a basis for comparing costs, income, and production. They provide a guide to the strong and weak points of the overall operation—so help him in making management decisions.

The farmer can also use his records to prove his ability to pay if he wants to borrow money. Some lending agencies require a complete list of the borrower's assets and liabilities as a basis for a loan. Others require estimates of income and expenditures for the coming year.

Records help to simplify preparation of income-tax returns, to substantiate loss from fire or theft, and to establish the value of items to be sold or transferred.

Production records are useful in measuring progress toward performance goals. Milk-production records are useful in culling low-producing dairy cows. Crop yield and fertilizer records may indicate which fields need more fertilizer. Records of size of litters and rates of gain are useful in selecting gilts for the breeding herd.

In the examples given on the following pages it is assumed, for purposes of simplification, that each family farm is owned by one operator and his family and that no rented land or partnership is involved.

However, financial settlements between partners, between landlord and tenant, and between father and son should be based on records. Other profit-sharing or lease agreements also require the use of such information.

A landlord may wish to keep an inventory of his assets and a record of depreciation charges on them. On a crop-share rented farm these assets may include only the land and permanent improvements. A tenant may want inventories of his livestock and machinery and a record of depreciation charges against these assets.

Both landlord and tenant will want records of crops grown, as shown on a map of the farm, and of the production obtained. Each will want records of the sale of his part of the farm produce and of his expenses.

## DOCUMENTARY RECORDS



Documentary records include legal papers that provide a basis for doing business. These records provide protection from fraudulent or unjust claims against you or your business.

Business agreements, leases, and contracts should be written in de-

tail, signed by the interested parties, and notarized. This procedure helps to insure fulfillment of the terms.

County governments usually record deeds of title to real property, deeds of trust or mortgages, easements, rights-of-way, and so on. Protect your other documentary records, such as insurance policies, purchase contracts, and rental agreements from fire or loss.

Keep receipts and bills of sale for major purchases. Write a note on bank checks explaining the purpose for which they are drawn. Keep the canceled checks as evidence of payment as long as another party may legally sue to collect. This limit, which is set by a "statute of limitations," usually extends 3 to 7 years, the time depending on the laws of the State in which you live.

## BALANCE SHEET

The balance sheet is a statement of farm assets and liabilities as of a specified date. The total farm assets minus the farm business liabilities is the owner's equity in the farm; this is a widely used measure of year-to-year financial progress.

This equity, however, is not the same as a farmer's personal net worth. The latter includes in addition to equity in the business, the value of household goods, the cash value of life insurance policies, bonds and stocks owned, and personal notes due him; it may include other real estate or even another farm if the other farm is under different management and a separate set of books is maintained for it.

Similarly, his personal liabilities include more than debts incurred as part of the farm business. Most farmers are interested in their personal net worth, in addition to their farm assets, liabilities, and equity in the farm business.

The following sections show you how to keep records of farm assets and liabilities. A sample balance sheet is shown on page 10.



## Assets

Farm assets include the inventory, notes and accounts receivable, prepaid expenses, and cash on hand.

## Inventory

An inventory is a complete list and evaluation of farm property on a stated date, usually the first day of the year. If you are renting your farm, however, you probably would prefer to take inventory as of the beginning date of your contract. For some types of farms this date may be March 1. On other types of farms—winter-wheat farms, for example—it may be August 1 or some other date that corresponds with the beginning of the crop year.

The date of inventory should be the same each year, even though there may be occasions when some slight variation would seem desirable. For example, you might wish to take inventory just after selling a flock of broilers or a herd of feeder cattle. Shifting the date of the inventory is not recommended because it leads to difficulties in reporting income for tax purposes.

The usual inventory includes two kinds of property. One kind includes items whose values fluctuate with market prices and for which inventory values are adjusted accordingly. Land, crops held for feed or sale, livestock held for sale, and supplies on hand are examples of this kind of property.

The other kind of property includes such depreciable items as machinery, buildings and other permanent improvements, and some classes of livestock. These are entered at cost or at an estimated beginning value, and each year the value is reduced by the amount of depreciation.

**Listing of items.**—Describe the items in enough detail so that you

can recognize them in future years. If you farm more than one tract of land, list each tract separately. Arrange the inventory so that land and buildings are listed in one section, and machinery and equipment in another. Other sections may be used for livestock, crops on hand, and supplies.

Inventory books for maintaining a permanent record of your inventory are available from many State colleges of agriculture, or you can make your own. The book should include space for at least 5 years' listings to make it unnecessary to recopy the inventory each year. It should contain space for a description of each item, the date it was acquired, the price paid if it was bought, and its value on the date of inventory. Other columns can be used to record values in succeeding years.

**Valuation of items.**—The method of valuation to be used will depend upon the purpose for which the valuation is made. It is often desirable to keep two or more records of inventory, each evaluated for a specific purpose. For purposes of analyzing the farm business



### Sample Crop-Equipment Inventory as of January 1, 1960

Item	Purchase		Years of useful life <sup>2</sup>	Amount of annual depreciation	Value, January 1			
	Year	Cost			1956	1957	1958	1959
Tractor, 2-plow	1952	\$2,200	\$1,980	12	\$165	\$1,375	\$1,210	\$1,045
Disk, 8-foot tandem	1950	200	180	12	15	110	95	80
Mower, 7-foot tractor	1946	175	158	12	13	45	32	19
Cornpicker, 2-row	1953	1,700	1,530	12	128	1,316	1,188	1,060
Plow, 2-bottom	1948	200	180	12	15	80		
Plow, 2-bottom	1956	<sup>3</sup> 270	243	12	20		250	230
Harrow, 4-row springtooth	1956	190	170	12	14		176	162
Mower, 7-foot tractor	1957	325	293	12	24			301
Combine, 7-foot mounted motor.	1958	2,700	2,430	12	203			

<sup>1</sup> The cost of each item was reduced by the salvage value, or 10 percent of the cost in this illustration.  
<sup>2</sup> For purposes of illustration, all items were depreciated over a 12-year period, using the straight-line method.

<sup>3</sup> The cost of the new plow was derived by adding the inventory value of the old plow (\$80) to the cash difference paid for the new plow (\$190).

or of establishing the farmer's equity, the current market value is most useful—that is, the price an item would bring at a farm sale. For tax purposes, Internal Revenue Service prescribes use of the cost-less-depreciation method of valuing depreciable assets.

In making a first inventory, an estimate of current market value may be the only method possible if you do not know the initial cost of an item. This is often the case when a farm is purchased or transferred with stock and equipment and a specific price is not placed on each item.

In making an inventory of machinery and equipment, list each major piece of equipment separately, as shown in the sample crop-equipment inventory on page 4. Small handtools may be entered as a group. Usually, these items are not subject to depreciation. Their full cost is charged against the farm business in the year in which they are purchased.

If you trade an old item for a new one, one way of valuing the new item is to add the cash paid for it to the inventory value of the old item. Or, you may enter the market value of the new item if there is a substantial difference between the market value and the sum of the cash paid plus the inventory value of the old item. If the price level has changed, the two values may differ greatly.

Making the first estimate of the value of a building or other perma-

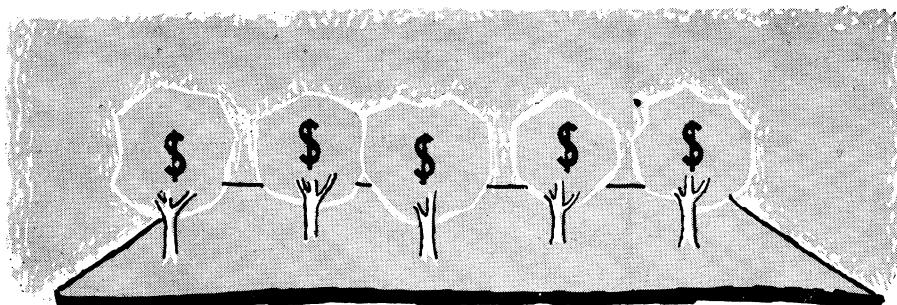
nent improvement is the hardest part of setting up farm account books. If, as with machinery, the date of purchase or construction and the original cost are known, one method of valuation requires only an estimate of its useful life. Then its current value is the original cost less depreciation from the time it was constructed to the present.

A less exact method of valuation is to estimate what it would cost to replace the improvement. If it was constructed 20 years ago and its estimated useful life is an additional 10 years, its present value is one-third of the cost of replacing it at current cost rates—two-thirds of its useful life has been depreciated.

Ordinarily, some kinds of capital improvements, such as diversion ditches, terraces, and land leveling, are not subject to depreciation. Once these improvements are made, they become part of the land. They may require regular maintenance to preserve the original structures, and these maintenance costs are chargeable to annual expenditures. Under present rules of the Internal Revenue Service, costs of these capital improvements as well as annual maintenance costs may be charged as annual expenditures if they are made to conserve the soil and water or to prevent erosion.

Improvements such as wells, tile drains, and farm ponds are subject to depreciation. (See page 6.)

Evaluation of orchards and tracts of timber pose problems that require individual treatment. Or-



chards and timber are subject to depreciation, but the value to be depreciated depends upon the way in which these assets were acquired.

A young orchard or grove may appreciate in value for several years. This appreciation raises the value of the farmer's equity in the farm and may add considerably to the value of the farm if it is sold. Ordinarily, however, if the farm is not sold, only that part of the appreciation represented by actual costs of development charged to the new orchard may be included in the value to be depreciated.

If you bought a growing orchard, for example, the value to be depreciated would be the difference between the price you paid for it and the value of similar land without trees. If you planted the orchard, and the cost of cultivating, spraying, and watering it up to bearing age was charged against the general farm business, there would be little value to depreciate. Perhaps only the initial cost of the trees planted could be depreciated. If, on the other hand, the costs of maintenance were not charged to the general farm business but were added to the accumulated cost of the young orchard, the amount to be depreciated when the orchard reached bearing age would be considerably larger.

Livestock held primarily for breeding purposes and for milk

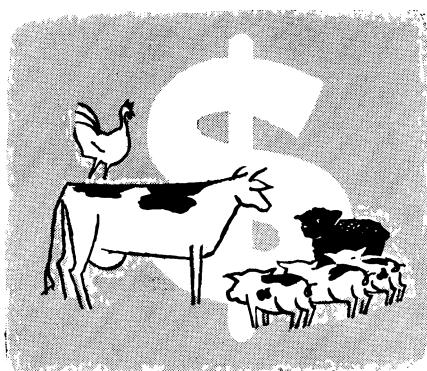
production should be entered in the inventory at conservative market values. Young animals may appreciate in value for a few years. After that, they should be depreciated in line with their market value. Enter in the inventory both the animals you buy and the animals you raise. Enter separately each animal or group of animals purchased so the information will be readily available to help you complete your income tax return. See the sample dairy herd inventory on page 7.

Other livestock, such as cattle to be fed out, poultry, lambs, and market hogs should be entered in the inventory at fair market values, as should crops on hand. Avoid extreme valuations based on temporary market situations. Usually, supplies of fertilizer, purchased feeds, and other materials to be used in production are valued at cost.

**Depreciation.**—Such items as machinery, equipment, and buildings are used for more than 1 year. The original cost of the item should not be considered as a 1-year expense. Instead, it should be spread over the number of years during which the item will be used. This annual cost is called depreciation. In order to determine the amount of depreciation, you will need to estimate the number of years in which the item will be usable.

The useful life of an item depends upon such things as its age at time of purchase, your repair and maintenance policy, amount of use, and rate of obsolescence. Rapid technological developments may make the equipment obsolete sooner than expected.

Determine the useful life of your depreciable property on the basis of your operating conditions and experience. If you use your machinery on other farms as well as your own, consider this fact in estimating the rate of depreciation.



## **Sample Dairy Herd Inventory as of January 1, 1960**

As a practical matter, it is helpful to enter new depreciable items in the inventory at the time they are bought. Similarly, depreciable items may be deleted from the inventory when they are sold. This procedure keeps the inventory current and assures that all pertinent information is entered when the transaction is freshly in mind.

If you use a purchased item during a major part of the year, count the year as one of the useful years in its life. If you buy the item

near the end of the year or crop season, it may be better to defer depreciation charges until the following year. The decision may depend on whether income in the current year is higher or lower than that anticipated for the next year.

Items may be depreciated according to one of three different methods—the straight-line, the declining balance (or constant-percentage), and the sum of the years-digits methods. But with any system, the total amount of depreci-

## Alternative Methods of Computing Depreciation During a 12-Year Period

Year	Straight-line		Declining-balance		Sum of the years-digits	
	Value on Jan. 1	Amount charged <sup>1</sup>	Value on Jan. 1	Amount charged	Value on Jan. 1	Amount charged <sup>1</sup>
1959-----	<sup>2</sup> \$2,000	\$150	\$2,000.00	\$350.00	<sup>2</sup> \$2,000.00	\$276.92
1960-----	1,850	150	1,650.00	288.75	1,723.08	253.85
1961-----	1,700	150	1,361.25	238.22	1,469.23	230.77
1962-----	1,550	150	1,123.03	196.53	1,238.46	207.69
1963-----	1,400	150	926.50	162.14	1,030.77	184.62
1964-----	1,250	150	764.36	133.76	846.15	161.54
1965-----	1,100	150	630.60	110.36	684.61	138.46
1966-----	950	150	520.24	91.04	546.15	115.38
1967-----	800	150	429.20	75.11	430.77	92.31
1968-----	650	150	354.09	61.97	338.46	69.23
1969-----	500	150	292.12	51.12	269.23	46.15
1970-----	350	150	241.00	41.00	223.08	23.08
1971-----	200-----	-----	200.00-----	-----	200.00-----	-----

<sup>1</sup> The total amount to be depreciated is \$1,800 (the original cost of \$2,000 less estimated salvage value of \$200).

<sup>2</sup> This is the original cost in 1959.

ation cannot be more than the original cost. The three alternative methods are compared above.

With the *Straight-Line* method, the same amount of depreciation is charged each year. This is the easiest and most frequently used method. Estimate the salvage value, or what the item will be worth when it is ready to be discarded. Subtract the salvage value from the original cost. Divide the answer by the total number of years during which you expect to use the item. The result is the annual cost, or the amount by which you reduce the value of the inventory each year during the life of the item.

For example, if a harvester cost \$2,000 and has a salvage value of \$200 and an anticipated lifespan of 12 years, subtract \$200 from \$2,000 and divide the remainder, \$1,800, by 12. The depreciation each year is \$150, and the balance that remains at the end of 12 years represents the salvage value. The rate of depreciation is \$150 divided by \$1,800, or 8½ percent.

With the *Declining-Balance* method or the constant-percentage method, the largest amount of depreciation is charged the first year and progressively less is charged in the following years. This method is harder to figure than the straight-line method, but the depreciation charges are more closely related to the declining market value of the item.

Usually, with this method, the factor used in computing depreciation is about twice as great as that used with the straight-line method. In order to charge the same amount of depreciation in a 12-year period, a factor of about 17½ percent with the declining-balance method is equal to 8½ percent with the straight-line method. This would reduce the value of the harvester to about \$200 at the end of 12 years—the same as the salvage value assumed with the straight-line method.

To estimate depreciation by this method, multiply the value of the item at the beginning of the year by

the appropriate rate. (Do not deduct the salvage value from the original cost.) If the cost of the item is \$2,000 and the rate is  $17\frac{1}{2}$  percent, the depreciation charges the first year will be \$350.

To determine depreciation charges for the remaining useful life of the item, multiply the diminished balance from the preceding year by the same percentage.

In this instance, the diminished balance for the second year is \$1,650. Multiply this amount by  $17\frac{1}{2}$  percent to find the second year's depreciation charges. The result is about \$289, and a balance of \$1,361 is left. In the third year, the balance of \$1,361 is reduced by  $17\frac{1}{2}$  percent, and so on. The amount that remains at the end of the useful life of the item represents salvage value.

The *Sum of the Years-Digits* method applies a different fraction each year to the total amount to be depreciated. Depreciation in the first year is the original value multiplied by a fraction whose numerator represents the number of years of useful life of the item. The denominator represents the combined total of the numbers 1 through the number that represents the useful life of the item ( $1+2+3+4$ , and so on). If the lifespan is 12 years, the fraction is  $12\frac{1}{78}$ .

Subtract the salvage value from the original cost of the item and multiply the answer by the fraction. If the salvage value is \$200 and the original cost is \$2,000, the answer ( $\$1,800 \times 12\frac{1}{78}$ ) is \$276.92, or the amount of depreciation in the first year.

Change the numerator of the fraction each year to the number of useful years remaining at the beginning of the year, but leave the denominator as it was in the first year. For example, for the second year multiply \$1,800 by  $11\frac{1}{78}$ . The answer, \$253.85, is the depreciation for the second year.

## Other assets

Notes and accounts receivable resulting from the farm business are part of your farm assets. They should include only money due you from the sale of farm property, farm products, or such farm-related services as custom work. Do not include any notes you hold as evidence of personal debts due you.

Prepaid expenses, such as advance deposits on purchases and prepaid insurance, should be included as assets.

Farmers who maintain separate cash or checking accounts for the farm business should include these items in the farm balance sheet. Ordinarily, farmers use the same cash and checking accounts for both business and personal use; the part kept for use in the farm business may be included in the farm balance sheet.

## Liabilities

Farm business liabilities include notes, if any, secured by real estate mortgages on the farm, rent due now or in the near future, accounts payable to feed dealers and farm-supply stores, and notes given in payment for machinery and livestock. Nonrecourse loans from the



Commodity Credit Corporation should be included if the crops given as security for the loan are included in the assets.

A Commodity Credit Corporation loan may be treated either as a loan or as a sale of the commodity. If, for example, a CCC loan is secured by 1,000 bushels of corn on your farm and the loan is not to be repaid, the corn may be left out of the inventory and the

loan left out of liabilities. But if the loan is likely to be repaid and the corn redeemed, the corn should be shown in the inventory and the loan listed among the liabilities.

Ordinarily, an amount due on a home appliance, such as a television set or a refrigerator, is not considered a farm liability.

The farmer's equity in the business is the difference between farm assets and farm business liabilities.

### **Sample Farm Balance Sheet as of January 1, 1960**

#### **FARM ASSETS**

##### **Inventory:**

Land and buildings 166 acres, at \$190 an acre-----	\$31, 540
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##### **Livestock:**

18 milk cows, at \$233 each-----	4, 194
14 other cattle-----	2, 002
12 brood sows, at \$40 each-----	480
52 other hogs, average weight 125 lb., at \$16.80 per hundred-weight-----	1, 092
120 hens, at \$1.30 each-----	156

Total livestock-----	\$7, 924
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##### **Machinery and equipment:**

2 tractors (1 at \$600 and 1 at \$1,045)-----	1, 645
1 truck, at \$600-----	600
1 auto, at \$800 ( $\frac{1}{2}$ for farm share)-----	400
Other machinery and equipment-----	3, 800

Total machinery and equipment-----	\$6, 445
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##### **Crops on hand:**

2,800 bu. corn, at \$1 per bushel-----	2, 800
1,000 bu. oats, at \$.60 per bushel-----	600
60 tons hay, at \$12 per ton-----	720
85 tons silage, at \$8 per ton-----	680

Total feed-----	\$4, 800
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Supplies—gas, oil, fertilizer, pesticides, and so on-----	152
---	-----

Total inventory-----	\$50, 861
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##### **Other assets:**

Notes receivable-----	800
Accounts receivable-----	59
Cash-----	1, 100

Total farm assets-----	\$52, 820
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#### **FARM LIABILITIES**

Accounts payable at elevator, oil company, and so on-----	156
Balance of loan on tractor-----	300
CCC loan on corn-----	1, 600
Balance due on real estate mortgage-----	11, 400

Total farm liabilities-----	\$13, 456
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EQUITY IN FARM (assets less liabilities)-----	\$39, 364
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## SALES AND PURCHASE RECORDS

Consider your needs carefully before you start a system for keeping records of sales and purchases. You will need to decide how much detailed information you want in the records. Start with a simple system and add more detail as needed. The complexity of your business and the way you plan to use the information will determine the kinds of records you need to keep.

Many kinds of record books are available from State colleges of agriculture, farm suppliers, publishers of farm newspapers, and stationery stores. Some of them may be satisfactory for your use. Often, the best record book is one you make yourself, starting with a plain multiple-column journal.

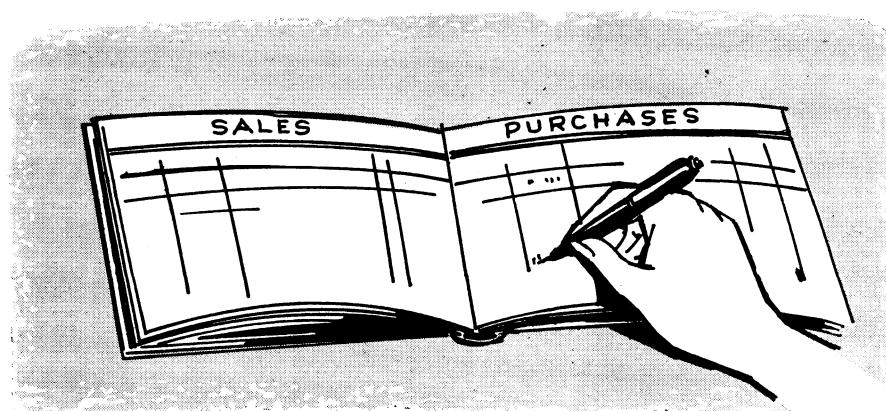
The multiple columns will provide space for sufficient information for most family farms. Also, a journal of this kind is flexible enough to fit both simple and more detailed record systems. For a simple system, record sales on the left-hand pages and purchases on the right-hand pages of the journal. If you need more columns, use the first two facing pages for sales, and the next two for purchases. To keep the system orderly, start the records for each month on new pages. Sample sales and purchase records

for 1 month are shown on pages 13 and 14. Reduce the work of summarizing your records at the end of the year by totaling the sales and purchase columns each month.

### Sales

The first three columns on the sales page should be headed "Date" (of the transaction), "Description," and "Amount received." In the description column include such information as the name of the buyer, the kind of product or service sold, quantity sold, and price received.

Additional columns are provided to group sales of similar items, such as crops, cattle, hogs, milk, eggs, and so on. Use one column for each major product. If custom work is a major source of income, you may wish to use a separate column for recording income from this source. It is desirable to provide a column for "other" or "miscellaneous" sales. This column is used to record sales or farm receipts that occur only a few times a year. Examples are conservation payments, tax refunds, and patronage dividends. Another column should be used for sales of farm assets, including machinery, breeding stock, and any other item on which depreciation has been claimed for income tax purposes.



Some sales will be for cash and others for credit. For cash sales, make two entries of the amount of sale—one in the amount received column, and the other in the appropriate column for the kind of product or service sold. If an item is sold and no cash or note was received, do not make an entry in the amount received column. Enter the amount in the amount received column only when payment is received. Any blank spaces in this column will indicate your accounts receivable—the money others owe you. If you received a note in lieu of cash, show the amount of the note in the amount received column.

## Purchases

In the purchase section of the journal, provide a column for each major class of farm expenditures—hired labor, feed bought, tractor fuel and oil, machinery repairs, fertilizer—and such other columns as are appropriate for your type of farm. Provide columns for purchases of such capital items as breeding stock, machinery, and new buildings. Purchases of this kind are not chargeable entirely to the one year's business; they are entered in the inventory, and only the depreciation is charged against any one year.

Provide one or more columns for recording expenses that are partly personal and partly for the farm. Joint expenses include automobile expenses and charges for telephone and electricity. Another method is to keep a separate, more detailed record of joint expenses.

At the end of the year, divide the joint expenses so that a fair share of them is charged to the farm business. Automobile expenses, basic telephone charges, and charges for electricity may be divided on the basis of the proportion of the estimated total use for the farm busi-



ness. Usually, long distance telephone calls that are chargeable to the farm business can be identified and charged directly.

Provide also a column for "other" or "miscellaneous" expenses. Use this column to record taxes, rent, and interest paid, premiums on property insurance, and other expenses that are incurred only a few times a year.

Make entries in the purchase record as you did in the sales record. Show the date of purchase and a description of what you bought and from whom. If you paid cash for the item, make an entry in the amount-paid column as well as under the appropriate kind of purchase. Any blanks in the amount-paid column will show your accounts payable. As these accounts are paid in cash or by notes, enter the amount in this column.



## Sample Sales Record for 1 Month

Date	Description	Amount received	Crop sales			Livestock sales			Livestock products			Other receipts	Other assets sold	
			Corn	Wheat	Other	Purchased feeder stock	Dairy cows	Other cattle	Hogs	Chickens	Milk	Eggs		
Oct. 1	Cow (11-113)—E. Jones	\$150.00					\$150							
3	148 doz. eggs	59.20												
6	Combining—Brown	100.00												\$100
10	16,600 lb. milk (September)	717.12												
15	900 bu. oats—E. Smith	(1)				\$540								
21	6 tons hay—McCarty	120.00				120								
23	Veal calf	30.00							\$30					
25	96 hens	57.00									\$57.00			
26	2-row planter	100.00												\$100
	Total for month						\$660			\$37.60				
									\$150					\$100

<sup>1</sup> A blank in this column indicates that payment has not been received.

## Sample Purchase Record for 1 Month

<sup>1</sup> Items in this column are usually entered in inventory and depreciated.  
<sup>2</sup> Expenses for automobile, electricity, telephone, and so on may be recorded.

Separate accounts for automobile, electricity, telephone, and so on may be recorded here or in a separate, detailed account and divided between farm and personal expenses at the end of the year.

\* A separate account was kept of expenditures for material and labor while the building was under construction. The total was transferred to the farm record after the building was completed. Also entered in inventory.

## END-OF-YEAR SUMMARY

At the end of the year, you will want to summarize your records for your own information and as a basis for filing income tax reports. A part of the summary requires that you repeat some of the things that were done at the beginning of the year. These include taking an inventory, evaluating the assets, and completing the balance sheet. (See page 3.)

If depreciable items bought during the year were not entered in the inventory at the time of purchase, enter them at the end of the year. Also, estimate the remaining years of useful life of these capital goods and compute the depreciation.

After completing the balance sheet, you are ready to summarize the sales and purchases for the year. Use a sheet similar to those used to record daily sales and purchases, and transfer to it the totals for each month. Add monthly totals to get totals for the year.

The column headings in the sample sales and purchase records were selected with a view to simplifying for you the preparation of your Federal income tax return.

### Net Farm Income

Net farm income is one of the most significant measures of returns to the operator and his family for their labor, management, and equity in the farm business.

To find the net income, first find the net cash income. Then adjust this figure to account for two other aspects of the farm business. These other aspects are: Change in inventory values of farm assets and addition of the value of farm products consumed on the farm.

The steps necessary in computing net farm income are described below and in the sample computation shown in the following box.

Sample Computation of Net Farm Income	
Total sales-----	\$11, 325
Minus total purchases-----	5, 050
Net cash farm income-----	\$6, 275
Minus change in inventory (ending inventory less than beginning)-----	691
Value of perquisites-----	736
Net farm income-----	\$6, 320

1. Subtract total farm purchases for the year from total farm sales for the year to get the net cash income from farming.

2. Find difference in inventory values of farm assets as shown by beginning and ending balance sheets. If the value of these items is greater in the ending inventory than in the beginning inventory, add the difference to net cash income. If value of the ending inventory is less than the value of the beginning inventory, subtract the difference from net cash income.

3. Add value of eggs, milk, meat, and other perquisites furnished by the farm. No provision has been made for accounting for the value of these items in the sample sales record shown. To estimate their value, first estimate the quantities used daily, weekly, or monthly. Multiply this figure by 365, 52, or 12, to get an estimated quantity for a year.

Value these items according to the price you would have received for them if you had sold them.

### Additional Measures of Returns From Farming

Once you have found the net farm income, you can—with some additional calculations—estimate returns to operator and family labor and management, to operator's labor and management only, to the

family's equity in the farm, or to management. Methods of computing these different measures of return are illustrated in the following tabulations.

#### **Computation of Additional Measures of Returns From Farming**

Net farm income (return to operator and family labor, management, and equity) -----	\$6,320
Less interest on average equity (\$39,364 $\times$ 5 percent) -----	1,968
Return to operator and family labor and management -----	4,352
Less value of unpaid family labor, other than operator's-----	400
Operator's labor income (return to operator's labor and management) -----	\$3,952
Net farm income-----	\$6,320
Less value of unpaid family labor other than operator's-----	\$400
And less value of operator's labor, using skilled farm labor rate of \$1.25 per hour-----	3,375
	3,775
Return to equity and management -----	2,545
Less return to equity at 5 percent -----	1,968
Return to management-----	\$577

To estimate returns to any one of these resources, it is necessary first to decide upon a fair return, or a market price, for one or more of the others. For example, to estimate returns to operator and family labor and management, first decide upon an appropriate return to the equity in the business. Subtract this amount from net farm income.

An appropriate return to equity may be based on the prevailing interest rate on farm mortgage loans. Multiply this rate by the value of your equity in the farm business.

To compute the return to the operator for his own labor and man-

agement, deduct from the return to operator and family labor and management an estimated value of the unpaid labor of other members of the family. One way to estimate the value of family labor is to assume that it is worth as much as it would cost to have the same work done by hired labor.

The return to your equity in the farm and to your management can be estimated by deducting from net farm income the value of operator and family labor. You have estimated the value of family labor. Now proceed to estimate the value of the operator's labor. In the example at left, operator labor is assumed to be equal in value to that of a skilled hired farmworker. A similar method may be appropriate for your farm.

Return to management is the remainder, if any, after deducting from net farm income the assumed charges for operator and family labor and for the family's share of the capital invested in the farm.

In many States, farmers cooperate with the State colleges in keeping detailed business records. These records are summarized and analyzed, and the results are published. Usually, the information is available by type of farm, by size of farm, or both. You may want to compare returns on your farm with those on similar farms in your State.

The methods of farm business analysis are not uniform among States. If your records are to be comparable with those on cooperating farms in your State, you may need to adjust them. In some States, for example, returns per hour for all labor (operator, family, and hired labor) is used as a measure of return to labor. To make your records comparable, you would need to know the basis for estimating the total numbers of hours of labor, especially of oper-

ator labor. Also, as you have included costs of hired labor as an expense, these costs would need to be deducted from expenses. You might need to make other adjustments.

Also, return to capital is sometimes computed as return to all capital including rented and borrowed capital, as well as the farmer's equity. This calls for further adjustment in the records.

## PRODUCTION RECORDS

Production records can help you find the parts of your business that need strengthening. If it is not possible to strengthen these enterprises, you may want to discontinue them. These records can also help you find the parts of your business that you may wish to expand. As with sales and purchase records, consider carefully the kinds of records you need for your business. It is easy to start a set of records that will require more work than the information from them would justify.

You will find that some of the most useful records are those that enable you to compute rates of performance on your farm. These rates can be compared with those obtained by your neighbors or with standards for your area. Records of eggs and milk produced, pounds gained by beef cattle or hogs, and crops produced provide part of the needed information. You need also to know the number of hens in the flock or of cows milked, the number of beef cattle or hogs fed, the length of the feeding period, and the number of acres of each crop grown.

With this information, you can compute such measures of performance as the number of eggs laid per hen per year, the number of pounds of milk produced per cow in the herd during a year or by each cow, the number of pounds of gain per day for beef cattle or hogs, and crop yields per acre.

Unless crop and livestock yields on your farm are at least as high as the average for your community,

your net farm income is likely to be below the average. If yields of some enterprises are high and others are low, you may want either to take steps to raise the low yields or abandon these enterprises and concentrate on those with high yields. Your records will help you make these decisions.

### Crop-Production Records

Some farmers can remember all details about crops grown on a specific field for a number of years. Most farmers, however, soon forget such pertinent details as how much and what kind of fertilizer was applied to obtain a given yield.

A sample of one kind of crop-production record for one year is shown on page 18. The sample provides space for recording information about fertilizer and seed used—two factors that are most influential in affecting yields. You may wish to record information about other significant factors. If some of your fields are irrigated, for example, you may wish to provide space for recording the dates of irrigation and the amount of water applied each time.

A map of the farm showing the location and dimensions of each field is necessary if the record is to be useful. In addition to identifying fields listed on the crop-production record, the map may show how small or irregularly shaped fields can be recombined into larger, more uniform fields that are easier to work.

**Sample Crop-Production Record, 1959**

Field	Acres	Crop	Fertilizer used			Yield	Comments
			Kind	Pounds per acre	Variety	Quantity per acre	
A	22	Corn	10-20-10 33-0-0	200 150	IH-4249	9 lb.	78 bu. Second year corn.
B	13	Corn	10-20-10 33-0-0	200 200	AES-704	9 lb.	74 bu. Second year corn.
C	12	Oats	10-20-10	150	Cherokee	3 bu.	59 bu. Seeded 12 lb. alfalfa per acre.
D	18	Alfalfa	0-20-0	200	Buffalo		4 tons silage and 1.5 tons hay. Some spittle bug damage.
E	40	Corn	10-20-10 33-0-0	200 100	IH-4249	9 lb.	82 bu.
F	23	Wheat	10-10-10	150	Pawnee	2 bu.	42 bu. Seeded 12 lb. alfalfa per acre; top-dressed.
G	17	Alfalfa	0-20-0	200	Ranger		3.2 tons Sprayed with $\frac{1}{2}$ lb methoxychlor.

Your records will tell you whether you are obtaining satisfactory yields over a period of years. If yields are not as high as you think they should be, the records will help you or a farm-management specialist find the reasons for the low yields and how to correct them.

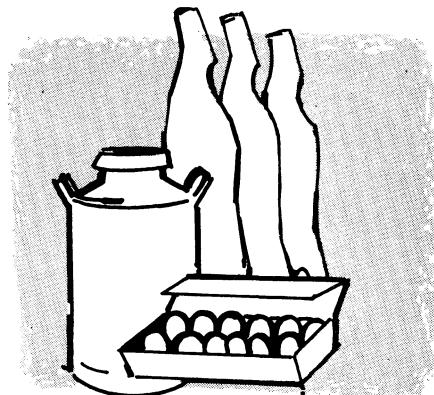
## Livestock-Production Records

Useful measures of livestock production require the keeping of more detailed records than are needed for equally good measures of crop production. Production of eggs and milk are continuous processes and part of the produce is harvested each day. Therefore, you need either daily records of the quantities of eggs and milk produced or some basis for estimating production.

If you fatten beef cattle or feed hogs, you may want to know the number of pounds gained per head per day. Even these simple measures may be difficult to obtain. For example, you may not be able to measure the rate of gain of a lot of feeder cattle unless you have access to scales on which to weigh them at the beginning of the feeding period.

Production or gain per pound of feed consumed is also a useful measure of efficiency. If you are feeding a balanced ration, production per pound of concentrates consumed will indicate how efficiently a lot of steers, for example, converted feed to beef. The quantity of concentrates fed per day may be changed several times during the year, and a record of the quantity fed or a basis for estimating it is necessary.

With information about your own efficiency as a livestock feeder, and the best estimates obtain-



able on future prices of feed and finished livestock, you can estimate how much you can afford to pay for feeder pigs, lambs, or cattle.

### Measuring livestock production

The method used to measure livestock production differs slightly for each class of livestock. The easiest way to record egg production is to count the number of eggs as you gather them and record the number gathered each day.

Milk produced by a dairy herd or by each cow could be weighed or measured daily. You might prefer, however, to use less time-consuming (though less exact) methods. If you sell whole milk, you can record the quantity sold and add an estimate of the quantity consumed for family use and fed to calves. This method is useful if you want to know only the production for the entire herd. Another method consists of weighing the milk produced by each cow in 1 day of each week or month and multiplying the 1 day's production by 7 or by the number of days in a month, as appropriate. Add the totals for the weeks or months during which the cow was milked to arrive at total production for one lactation period.

If you are a member of a dairy herd improvement association, the tester will weigh the milk produced by each cow in 1 day of each month. From these records, you can estimate the production of each cow during one lactation period. The tester will also weigh the feed fed to each cow and estimate for you the quantity of milk produced per pound of feed.

Although the most useful measure of livestock production is the production per hen or per animal, most farmers find that keeping records on individual hens or animals, except milk cows, becomes tedious. Therefore, they keep records of production for the flock or herd and divide by the number of hens or animals in the flock or herd. But what is the proper number to use as a divisor? Should it be the number at the end of the period, the number at the beginning of the period, or some compromise between the two? The sample record of egg production and number of hens in the flock on page 21 illustrates one method of estimating the average number of hens in a flock. It makes allowance for hens added to the flock during the period and for those removed by death, sale, or use in the home.

In producing meat animals, gain per head per day and death losses are two indicators of efficiency of production. The records needed to obtain these measures include the numbers of animals put on feed, their average weight at the beginning of the feeding period, and the date they were started on feed. Similar information is needed for the end of the feeding period.

If you have kept a feed record, information on total gain of livestock on feed will enable you to estimate gain per pound of feed or concentrates fed, or feed cost per pound of gain.

## Feed records

Feed is the largest single item of cost in producing livestock and livestock products. It is important, therefore, to keep feed costs as low as possible for the quality of products you hope to market and the time you want them ready for market. Individually, you can affect the price of feed only slightly, if at all. But if feed consumed per unit of production on your farm is average or above, you can boost your net income by obtaining more efficient use of feed. You will not know the amount of feed used per dozen eggs or per pound of gain on livestock, however, unless you maintain records of feed consumed by each class or group of livestock.

The keeping of feed records is not difficult, but because of the difficulty of measuring the feed consumed, many farmers do not keep such records. It is relatively easy to measure the feed consumed if, for example, all the feed for a flock of hens is purchased. But, if milk cows or beef cattle are fed on pasture, it becomes harder to measure either the quantity or the value of the roughage consumed. You may have difficulty in measuring the grain fed because you are feeding hogs, chickens, and beef cattle from the same bin. If you use self-feeders or separate bins for each class of livestock, the problem of measuring the feed consumed becomes easier.

The method of recording feed for hens shown on page 22 can be used if you can measure the feed consumed. For purposes of illustration it is assumed that all mash is purchased and that farm-raised grains are measured or weighed at the time they are put in the bin. The illustration shows a record of feed fed in 1 month. This method could be applied to any period. If

you feed cattle or hogs, you will probably record the feed consumed until the animals are sold. Or if you have access to scales, you may wish to check on the amount of feed consumed per pound of gain for a part of the feeding period.

With records of feed consumed by and production of each group of

livestock, you have the information needed to indicate whether or not the rates of performance are at profitable levels. Without such records, you may be making money on one group of livestock and losing part or all of it on another, without knowing which enterprises are profitable and which unprofitable.

### Sample Egg Production and Flock Number Record for 1 Month

Day	Number of eggs gathered				Number of hens added	Number of hens subtracted			Number of hens in flock
	First time	Second time	Third time	Total		Died	Sold	Eaten	
1	498	500		998					2,010
2	277	213		490			884		1,126
3	286	253		539		2		1	1,123
4	301	249		550		1			1,122
5	611	744		1,355	1,684	1		1	2,804
29	784	713		1,497					2,800
30	816	699		1,515		1			2,799
31	831	661		1,492				1	2,798
Total for month				34,638	1,684	13	884	8	66,523
Average number hens				<sup>1</sup> 2,146					
Eggs per hen per month				<sup>2</sup> 16.1					
Eggs per hen per day				<sup>3</sup> .52					

<sup>1</sup> Total number of hens for the month divided by number of days in month ( $66,523 \div 31$ ).

<sup>2</sup> Total number eggs gathered divided by average number of hens ( $34,638 \div 2,146$ ).

<sup>3</sup> Total number eggs gathered divided by total number of hens ( $34,638 \div 66,523$ ).

### Sample Feed Record for Hens

Date	Description	Price or value per unit	Purchased feeds				Number pounds (estimated)	Value		
			Mash		Shells and grit					
			Number pounds	Value	Number pounds	Value				
Oct. 1	Feed on hand	\$71.20	1,600	\$71.20	600	\$12		1,200		
6	Bought 2 tons of mash	\$88 per ton	4,000	176.00				\$21.60		
6	50 bu. cr. corn <sup>1</sup>	\$1 per bushel								
20	Bought 4 tons of mash	\$86 per ton	8,000	344.00						
24	30 bushels wheat <sup>1</sup>	\$1.50 per bushel								
Total			13,600	591.20	600	12		116.60		
Nov. 1	Feed on hand		2,700	116.10	250	5		5,800		
	Feed used in October		10,900	475.10	350	7		3,200		
								69.00		
								2,600		
								47.60		

<sup>1</sup> Moved grain from general farm storage to bin in henhouse.